Appl. No. 09/943,005
Amdt. Dated May 20, 2006
Reply to Office Action of May 03, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 to 119 (Canceled)

Claim 120-131 (~~new~~Canceled) ~~A method of path restoration in a communication network having a first switching router and a second switching router, first and second communication paths extending between said first and second switching routers, said second communication path including at least one communication path element different from said first communication path, the method comprising steps of:~~

~~creating a first label switched path on said first communication path;~~

~~placing one or more data flows within said first label switched path;~~

~~creating a second label switched path on said second communication path;~~

~~associating said second label switched path with said first label switched path so as to identify said second label switched path as an alternative path for said first label switched path;~~

~~transferring knowledge of said one or more data flows within said first label switched path to said second label switched path; and~~

~~redirecting data flows destined for said first switched path to said second label switched path.~~

Claim 132 (currently amended): A method of path restoration in a communication network having a first switching router and a second switching router, first and second communication paths extending between said first and second switching routers, said second communication path including at least one communication path element different from said first communication path, the method comprising steps of:

creating a first label switched path on said first communication path;

placing one or more data flows within said first label switched path;

creating a second label switched path on said second communication path;

associating said second label switched path with said first label switched path so as to identify said second label switched path as an alternative path for said first label switched path;

transferring knowledge of said one or more data flows within said first label switched path to said second label switched path; and

redirecting data flows destined for said first switched path to said second label switched path;~~A method as claimed in claim 129,~~

wherein said step of creating a second label switched path comprises said step of associating said second label switched path and further comprises a step of sending a set up signal to said second switching router, said set up signal having a extra data field identifying the first label switched path;

wherein the step of transferring knowledge further comprises transferring a soft state of each said one or more data flows; and

wherein each said first and second switching routers have an incoming label map for each said first and second label switched paths and the step of transferring knowledge comprises a step of copying entries from the incoming label map of said first label switched path to the incoming label map of said second label switched path.

Claim 133 (Canceled)

Claim 134 (Currently amended): A router for routing data onto a network having a network node and first and second communication paths extending from said router to said network node, said router comprising:

first routing means for routing a first label switched path onto said first communication path;

second routing means for routing a second label switched path onto said second communication path;

set up means for setting up said first and second label switched paths;

associating means for associating said second label switched path with said first label switched path so as to identify said second label switched path as an alternative path for said first label switched path;

transferring means for transferring knowledge of said one or more data flows within said first label switched path to said second label switched path; and

redirecting means for redirecting flows destined for said first switched path to said second label switched path;

~~A router as claimed in claim 133~~, wherein said associating means is configured to associate said second label switched path with said first label switched path by sending in a set up signal for said second label switched path, an extra data field identifying said first label switched path;

wherein the transferring means further comprises means for transferring a soft state of each said one or more data flows; and

wherein each said first and second routing means have an incoming label map for each said first and second label switched paths and the transferring means comprises means for copying entries from the incoming label map of said first label switched path to the incoming label map of said second label switched path.

Claim 135 (Previously presented): A router as claimed in claim 134, wherein said associating means is configured to use an RSVP signaling method and send the extra data field as an opaque object.

Claim 136 (Previously presented): A router as claimed in claim 134, wherein said associating means is configured to use a CR-LDP signalling method and send the extra data field as opaque TLV (Type Length Value).

Claim 137 (Previously presented): A router as claimed in claim 134, wherein said redirecting means is responsive to a change of state of data transmission associated with at least one of said first and second communications paths.

Claim 138 (Previously presented): A router as claimed in claim 137, wherein said redirecting means is responsive to at least one of a fault or failure in the transmission

capability of said first communication path and the density of data transmitted on said first communication path.

Claim 139 (new): A method as claimed in claim 132, wherein said step of redirecting said data flows comprises a single step of switching from said first label switched path to said second label switched path.

Claim 140 (new): A method as claimed in claim 132, wherein said step of sending a set up signal creating a second label switched path comprises an RSVP signalling method and the data field identifying the first label switched path is sent as an opaque object.

Claim 141 (new): A method as claimed in claim 132, wherein said step of sending a set up signal creating a second label switched path comprises a CR-LDP signalling method and the data field identifying the first label switched path is sent as an opaque TLV (Type Length Value).

Claim 142 (new): A method as claimed in claim 132, wherein the step of creating a second label switched path occurs before the step of placing one or more data flows within said first label switched path.

Claim 143 (new): A method as claimed in claim 132, wherein the step of creating a second label switched path occurs after said change of state.

Claim 144 (new): A method as claimed in claim 132, further comprising a step of monitoring a state of data transmission associated with said first and second communications paths and wherein said step of redirecting flows is responsive to a change of state of at least one of said first and second communications paths.

Claim 145 (new): A method as claimed in claim 144, wherein said step of redirecting flows is responsive to at least one of a fault or failure in the transmission capability of said first communication path and the density of data transmitted on said first communication path.

Claim 146 (new): A method as claimed in claim 132, wherein said first and second switching routers each have at least one incoming label map containing instructions for incoming data flows, said data flows being represented by corresponding flow labels, and wherein said step of transferring knowledge is performed on a regular basis.

Claim 147 (new): A method as claimed in claim 132, wherein said step of transferring knowledge is accomplished by said first and second label switched paths sharing an incoming label map.